oviposition after they have been parasitised by *Epipyrops*.

B. D. Gupta.

Sugarcane Research Station,
Muzaffarnagar,
February, 2, 1940.

A Note on the Lady-bird Beetles (*Coccinellidae*) Predating upon the Cane White-Fly, *Aleurolobus barodensis* Mask.

The cane white-fly, *Aleurolobus barodensis* Mask., is a serious pest in Banki which is an important sugarcane-growing tract in Orissa. The conditions which seem to favour the growth of the pest are:—

(*i*) The temperate-humid climate of the place, (*ii*) the practice of ratooning and (*iii*) the application of ammonium sulphate to the canes in order that they may quickly grow high up and escape the regular menace of floods. This practice, however, gives the crop a succulent leafy growth which finds favour with this pest, as with all other sucking insects.

The white-fly being thus abundant on the canes in that area it is not unusual to find its natural enemies like the parasitic hymenoptera and fungi and the coccinellid predators. While the former two categories of enemies have found, however meagre a place in the literature, one finds that practically no attention has been paid to the coccinellid predators. This appears to be due to the fact that the study of Indian *Coccinellidæ* on the whole has been neglected.

During my short stay in the Banki sugarcane tract of Orissa in July and August 1939, I observed the following nine species of coccinellids actively predating upon the various stages of the cane white-fly. For the majority of these coccinellids a record of their preying upon the cane white-fly is new.

1. *Cœlophora octo-signata* Muls.
2. *C. perroteti* Muls.
3. *C. unicolor* var. *romani* Muls.
4. *Cœlophora* sp.
5. *Chilomenes sexmaculata* (Fab.)
6. *Chilocorus nigritus* (Fab.)
7. *Verania discolor* (Fab.)
8. *Scymnus nubilus* Muls.
9. *S. gracilis* Mots.

Of these *C. octosignata*, *C. perroteti*, *C. sexmaculata* and *V. discolor* were breeding in the fields and their grubs were also actively preying upon the pest. *S. gracilis* preyed upon younger stages of the white-fly and also on the mites which were found in certain fields but not very commonly.

I wish to record my thanks to Dr. H. S. Pruthi, Imperial Entomologist, for identifying certain species of coccinellids mentioned in the text and also to Dr. V. K. Badami, Deputy Director of Agriculture, Orissa, for his many acts of kindness during my stay in that Province.

A. P. Kapur.

Entomological Laboratory,
Srinagar, Kashmir,
February 2, 1940.

A Note on the Chemical Examination of *Celastrus paniculatus*

The fixed oil from the seeds was examined by O. N. Kumaraswamy and B. L. Manjunath.[1] From the dark brown extract which they obtained with petroleum ether it appears that the 'rich orange coloured arillus' was rejected. They reported the presence of various saturated and unsaturated fatty acids and a sterol melting at 136°. In the course of this work they did not get 'satisfactory evidence for the presence of any alkaloid'.

Gunde and Hilditch[2] have also examined the oil from the husk and from the seeds. But from the dark brown colour that they have noted of the fruit coat extract, they appear to have investigated an old sample of the husk, as it has been noted by the present author that the bright red colour of the husk fades on being exposed to atmosphere. They have not investigated the unsaponifiable fraction besides noting the percentage yield.

The present author took up the examination of the bright orange coloured husk of the seeds in an attempt to isolate any active principle contained in the drug, the presence of which is warranted by the medicinal properties attributed to the drug.

The bright red coloured petroleum ether extract of the husk on keeping in the frigidaire for a fortnight deposited a white crystalline mass which was found to be a mixture of free fatty acids. The mother liquors after being freed of the solvent were saponified. The unsaponifiable fraction thereby separated, yielded a sterol melting at 184° which gave the characteristic colour reactions of a phytosterol.

The saturated fatty acids fraction appears to contain, besides palmitic and stearic acids a higher melting fraction (90–94°) sparingly soluble in ether and soluble in hot methyl and ethyl alcohol. Working through this method the yields of the different fractions were:—

- c.a., 10–15% of saturated free fatty acids.
- c.a., 0·8–1·0% of a phytosterol (m.p. 184°).
- c.a., 2% of a bright orange red colouring matter.
- c.a., 70% saponifiable fatty matter.

The colouring matter contained in the mother liquors of the sterol has not so far been obtained in a crystalline form. It is fat-soluble, dissolves easily in the more common organic solvents and appears to undergo decomposition slowly in air and rapidly in presence of mineral acids. Chromatographic and other experiments for the separation and the purification of the colouring matter are in progress and the results of complete investigation will be published in due course.

Methyl alcoholic extracts of the petroleum ether exhausted drug are also being examined.

SHARIFUDDIN AHMAD WARSI.

Imperial Agricultural Research Institute,
New Delhi,
February 21, 1940.

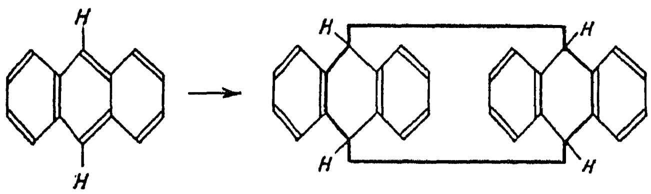
1 *J.I.C.S.*, 1936, 353.
2 *J.C.S.*, 1938, 1980.

Polymerisation of Anthracene to Dianthracene from the Magnetic Standpoint

IN a recent paper,[1] Bhatnagar, Kapur and Gurbaksh Kaur have reported the results of a study of the polymerisation of anthracene to dianthracene by magnetic susceptibility measurements with a view to determine the constitutive correcting factor, λ, for the cyclo-butane ring. Proceeding on the assumption that the polymerisation involves, among other structural changes of minor significance, (1) the loss of two double bonds and (2) the formation of a four-membered ring as a bridge between the two anthracene rings, and employing the relation

$$\chi_M = 2\chi_A + \lambda,$$

where χ_A and χ_M are the diamagnetic susceptibilities of anthracene and its dimer respectively, they have deduced the value for λ to be $+21{\cdot}6 \times 10^{-6}$, as compared with the value, $3{\cdot}05 \times 10^{-6}$, obtained by Farquharson and Sastri[2] from the magnetic susceptibility measurements of cyclo-butane carboxylic acid and of *n*-valeric acid. It must be pointed out that in the conversion of anthracene to dianthracene,[3] *no four-membered ring is formed,* but that the bridging group consists of an eight-membered puckered ring, as shown by the thick lines in Fig. 1.



Anthracene FIG. 1 Dianthracene

In this polymerisation reaction, two anthracene nuclei disappear and four benzene rings are present in the dimeric molecule formed. Since the constitutive factors for benzene and anthracene nuclei are $1{\cdot}5 \times 10^{-6}$ and $-16{\cdot}2 \times 10^{-6}$ respectively, and net change in the diamagnetic susceptibility to be expected would be $(+2 \times 16{\cdot}2 - 4 \times 1{\cdot}5) \times 10^{-6}$, *i.e.*, a fall in diamagnetism by roughly 26×10^{-6} units, neglecting the influence of ring-formation. The observed fall in diamagnetism, *viz.*, $21{\cdot}6 \times 10^{-6}$, is of this order,